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None

(58) Field of Search

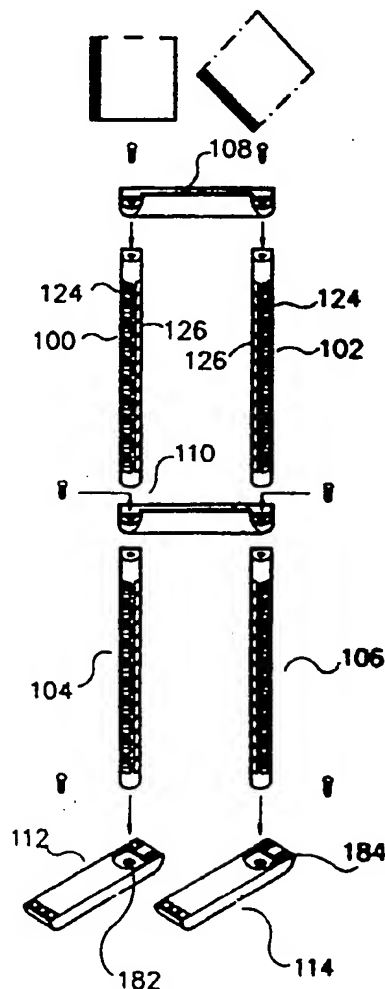
UK CL (Edition M) A4B , A4L LAV LBA LBDA LCR

INT CL⁵ A47B

(54) Storage rack

(57) A rack is disclosed which comprises support members 100, 102 connected together by means of cross members 108, 110. The support members 100, 102 have two pluralities of slots 124, 126 of differing dimensions. Depending on the relative orientation of the members, either the sets of slots 126 or sets of slots 124 face one another and, due to their differing dimensions, articles, for example cassette tape boxes or compact disc boxes may be accommodated in the rack. The rack may as shown be free-standing or it may be horizontally arranged or it may be mounted on a wall.

Fig. 1



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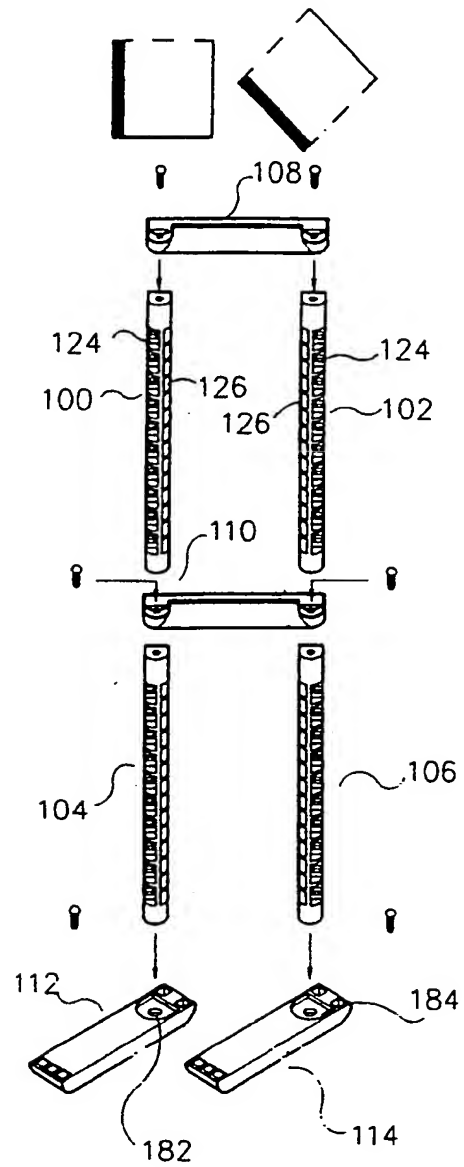


Fig. 1

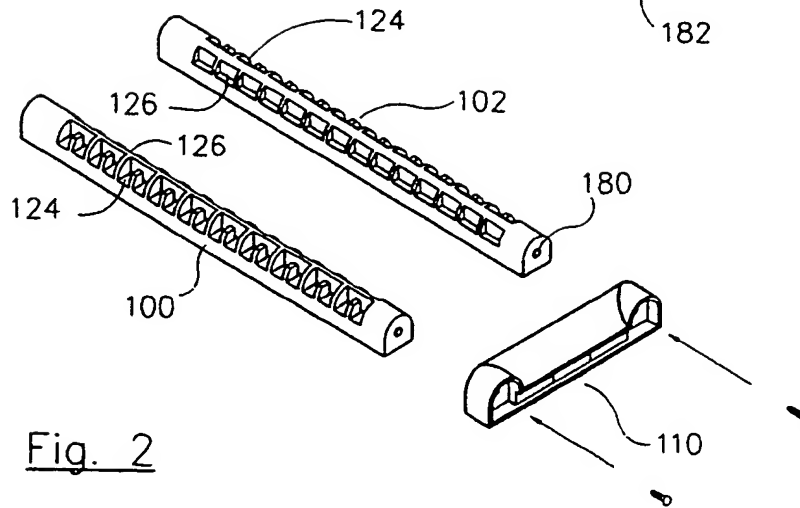


Fig. 2

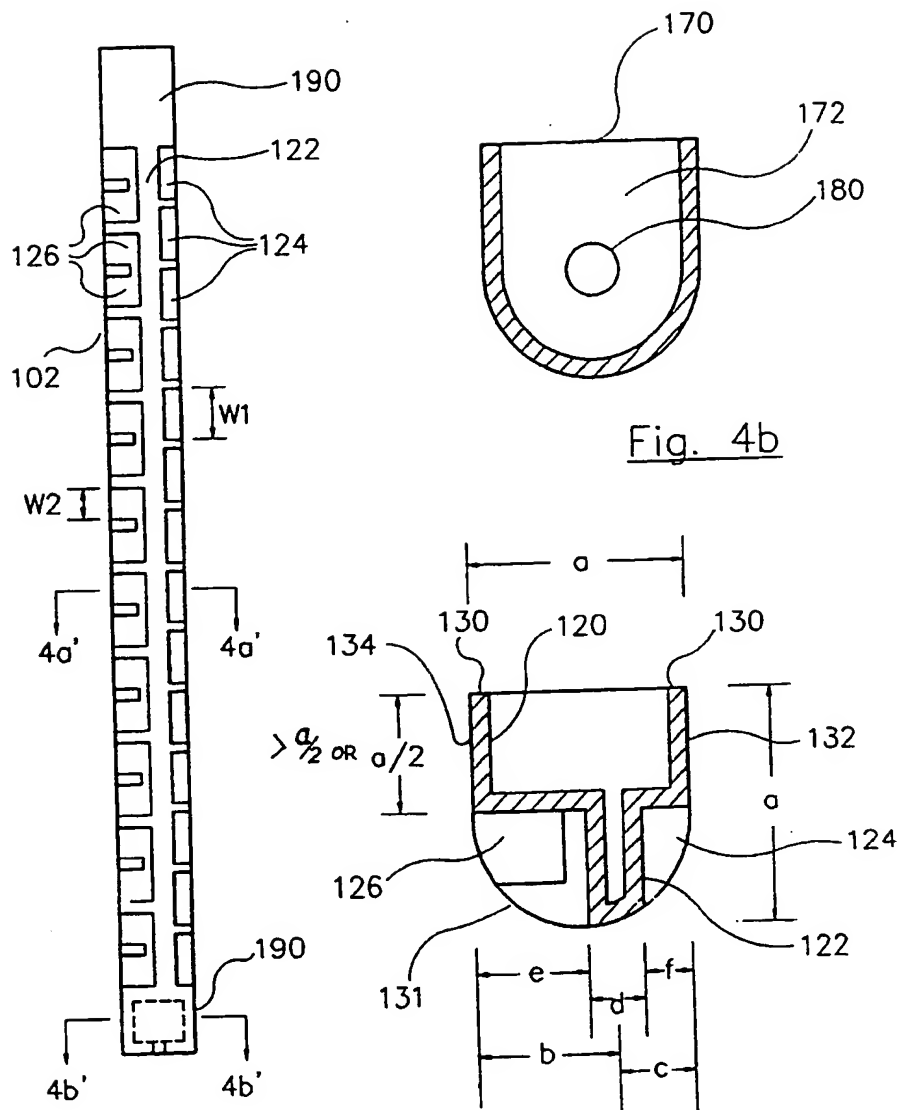


Fig. 3

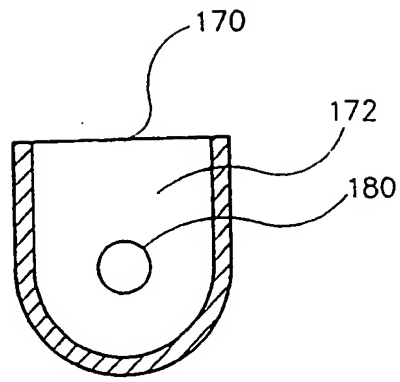
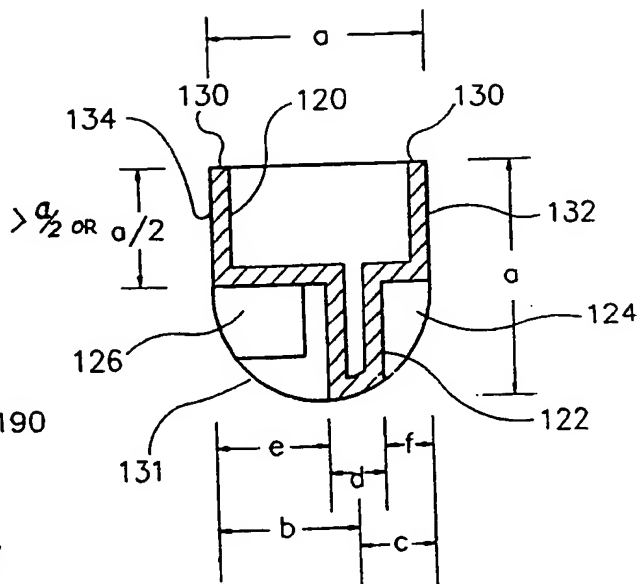


Fig. 4b



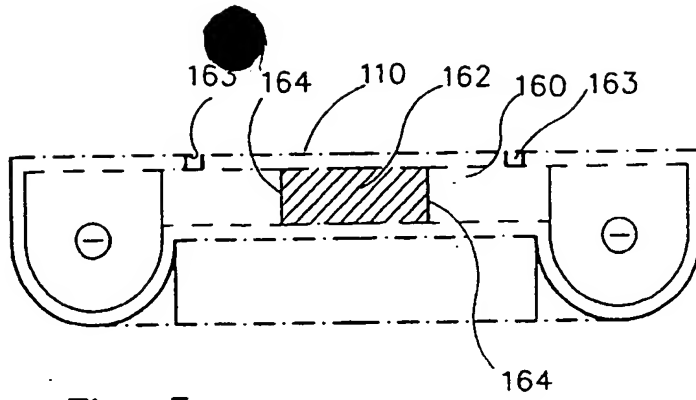


Fig. 5a

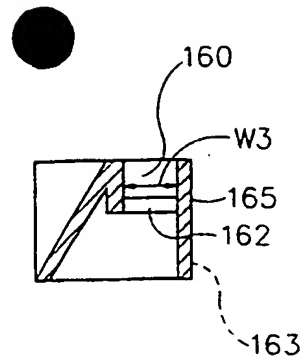


Fig. 5c

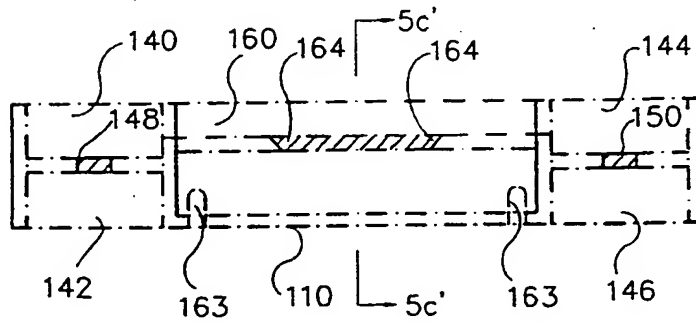


Fig. 5b

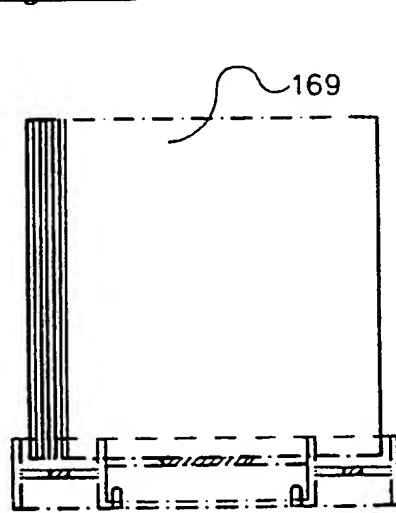


Fig. 6a

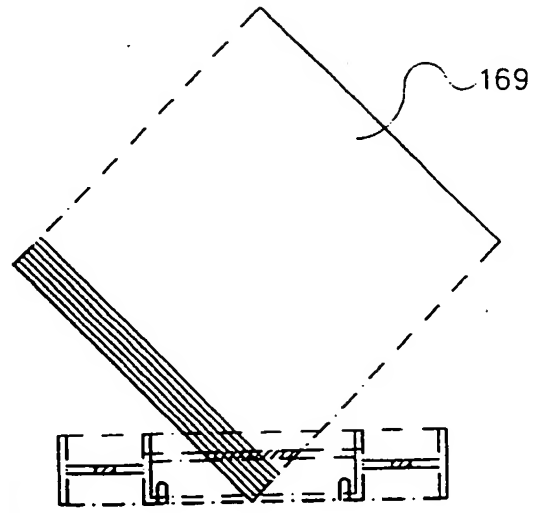
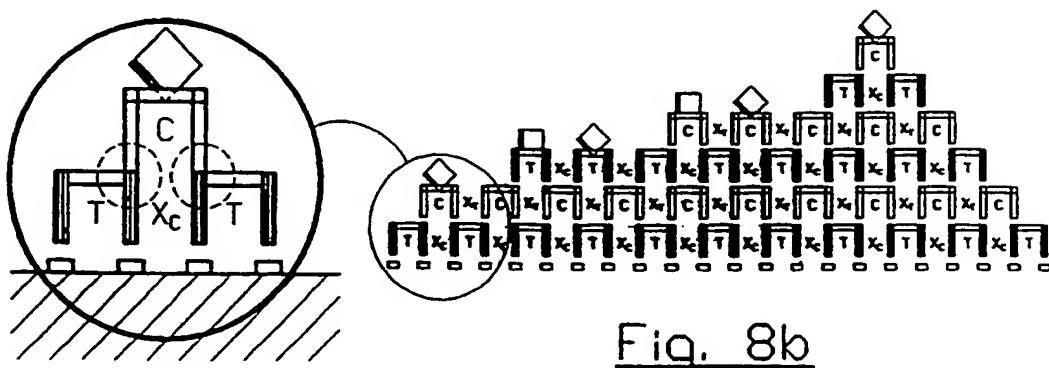
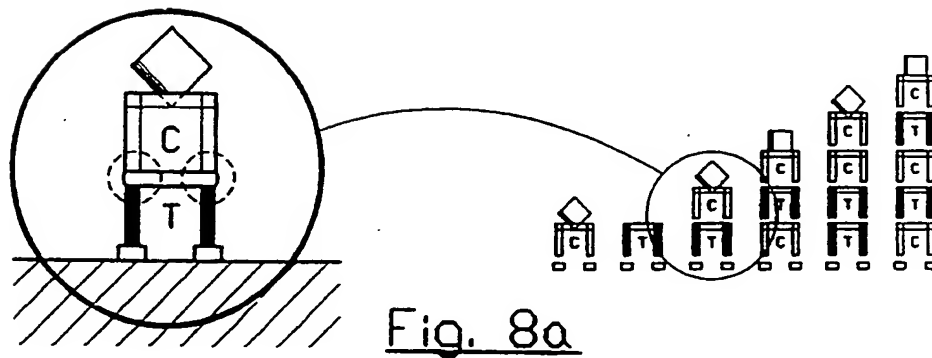
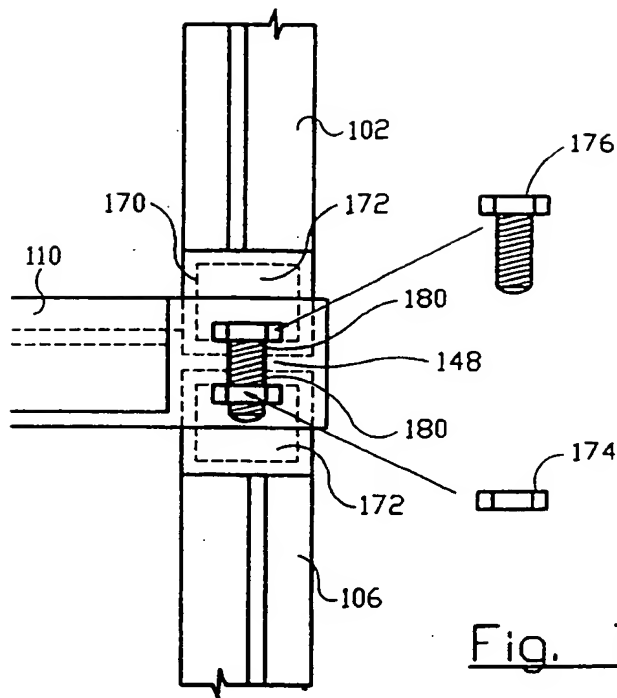


Fig. 6b



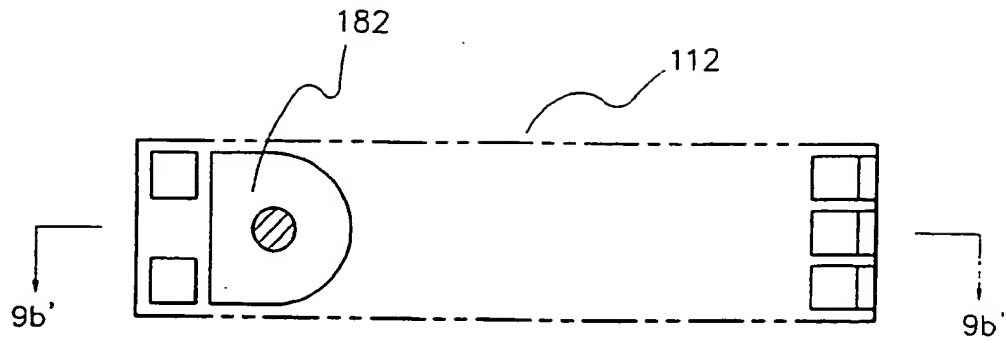


FIG. 9a

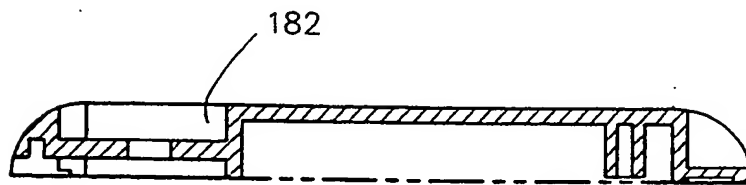


FIG. 9b

A RACK

This invention relates to a rack suitable for holding a plurality of items of different shapes.

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Racks used, for example, for holding compact discs are known. Similar racks for holding other kinds of recorded media, for example cassette tapes are also known. It is a disadvantage of such known racks that they are dedicated to hold that particular kind of recorded media and are not multi-purpose.

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According to the invention, in a first aspect there is provided a rack comprising first and second support members and means for retaining the members in spaced relation in two relative orientations, the support members each having a first and a second plurality of slots, like slots being arranged to face one another in said relative orientations to allow retention between the members of respective articles of differing dimensions.

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Preferably, the first and second pluralities of slots are so configured to allow retention of cassette tape boxes or compact disc boxes.

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The support members are preferably formed so that the first and second slots are separated by a dividing portion the

dividing portion being such that the overall difference in depth of the first and second slots is equal to half the difference in the dimension of the part of the articles which is received between the members.

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According to a second aspect of the invention, there is provided a kit of parts for forming a rack for retaining a first and second types of articles having differing dimensions comprising at least two support members each having a first and a second plurality of slots and at least one cross member connectable to the support members for holding the support members in spaced relation in two orientations in which like slots face one another, the first and second pluralities of slots having different depths to accommodate different said articles therebetween.

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In a further preferred form, a structure may be assembled of alternating storage regions for the respective articles by connecting several support members together and according to a third aspect of the invention, there is provided a rack assembly comprising a plurality of support members interconnected by a plurality of cross members to define regions for receiving first and second types of articles, the support members being each provided with first and second pluralities of slots arranged to face one another in two relative orientations to allow retention between the members of said respective articles, the cross

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members connecting first and second said support members in a first orientation and the second and the third support member in a second orientation whereby said different articles may be accommodated.

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An embodiment of the invention will now be described by way of example with reference to the accompanying drawings in which:

10 Figure 1 is an exploded perspective view of an embodiment of the invention.

Figure 2 is a view similar to figure 1 showing an alternative configuration of the rack.

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Figure 3 is an enlarged view of a support member of the embodiment of figure 1.

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Figure 4 is a cross sectional view through 4'- 4' of figure 3.

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Figure 5a is a view from above of a cross member of the embodiment of figure 1, with figure 5b being a view from the front and figure 5c being a cross sectional view through 5c'- 5c' of figure 5a.

Figure 6a shows a compact disc box retained in one

configuration in the cross member of figure 5 and figure 6b showing a compact disc box retained in another configuration.

5 Figure 7 is an enlarged cross sectional view showing the connection method of the support members and the cross member of the embodiment of figure 1.

10 Figures 8a and 8b are schematic views of arrangements of several racks of the invention.

Figures 9a and 9b are views of a foot of the rack with figure 9a being a view from alone and figure 9b being a cross sectional view in the plane 9b' - 9b' of figure 9a.

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With reference to the figures, an embodiment of the rack of the invention is shown. The rack has two configurations, one for retaining compact discs and another retaining tape cassettes.

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As shown in figure 1, the rack comprises a plurality of support members 100-106. Members 100, 104 are mirror images of members 102, 106 and are connected by means of cross members 108, 110. In order to support the rack in a vertical orientation two feet 112, 114 are connected respectively to support members 104, 106 to provide a self-standing structure.

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In an alternative orientation as shown in figure 2, the support members 100, 102 and cross members 110, 108 may be laid flat, for example on the base of a drawer or other horizontal surface. In a third variation (not shown) the feet 112, 114 shown in figure 1 may be removed and the cross member may be attached to a vertical surface, for example a wall, so that the rack may hang.

Support member 102 is shown in more detail in figure 3 and is comprised by an injection moulded plastics rod having two end portions 190 described in detail below and a support portion formed therebetween having a cross section as shown in figure 4 including a support portion 120 connected to a dividing portion 122. First and second pluralities of slots 124, 126 are formed on each side of the dividing portion 122. The slots 124 are of a width W_1 , sufficient to accommodate the narrowest dimension of a cassette box. Likewise, slots 126 are of a width W_2 , sufficient to accommodate the narrowest dimension of a compact disc box. The member 100 has two sides 132, 134 of length $A/2$ having edges 130 falling in the same plane, to provide a flat support surface when the member is laid horizontally and a semi-circular region 171 of radius $A/2$ connected to the sides 132, 134. The width D of the dividing portion 122 and its position relative to the slots 124, 126, which are respectively of widths F and E is of importance in the described embodiment as will be described

hereafter.

With reference again to figure 1, it can be seen that the support members 100, 102 are held relative one another by cross members 110. With the support members 100, 102 in the relative orientation shown in figure 1, the slots 126 of both members 100, 102 face one another at a distance defined by cross member 110 to be such as to allow a compact disc box to be held between two opposed slots 126. Furthermore, if support members 100, 102 are swapped, so that the slots 124 face one another, a tape cassette box may be held therebetween. As compact disc boxes and cassette boxes are of different dimensions and as the support members 100, 102 are the same distance apart, compensation for these is provided in the support members 100, 102 by positioning the dividing portion 122 so that the slot E is 7.5mm deeper than slot F, 7.5mm being the difference between the longest side dimension of a cassette box and the, slightly larger, smaller side dimension of a compact disc box.

Thus, by reversing the position of the support members 100, 102, due to the particular shape and position of the dividing member 122 and length of cross member 108, the different sizes necessary to accommodate cassette boxes and compact disc boxes can be provided.

With reference to figure 5, a cross member 108 is shown in more detail. The cross member 108 includes four sockets 140, 142, 144, 146 each arranged to receive an end of a support member 100. Circular openings 148, 150 connect, 5 respectively, sockets 140, 142 and 144, 146. Two U-shaped slots 163 are provided in the rear surface 165 of the cross member, each to receive the head of a screw, for example, for wall mounting. The upwardly disposed surface of the cross member 108 is provided with a channel 160 of a width 10 W3 similar to that of the width of a CD box and an opening 162 having ends 164 bevelled at an angle of 45°.

In use, as shown in figure 6, either the channel 160 or opening 162 can be used to accommodate a compact disc box 15 170 for display purposes, either by receiving an edge in channel 160 as shown in figure 6a or a corner in opening 162 as shown in figure 6b.

As shown in figure 1, the support members and cross members 20 may be joined together to form a larger rack and the connecting arrangement is shown in more detail in figure 4b and figure 7. Each support member 102, 106 has at each end a cavity 172 having an opening 170 formed in face 130. A circular opening 180 is provided in each end in register 25 with opening 148 in socket 140 of cross member 108, for example. In use, a nut 174 and bolt 176 are introduced through cavities 172 and connected through openings 180,

148 as shown in figure 7.

Using the cross members and support members, it is possible to construct a larger rack as shown, for example in figures 8a and 8b. The arrangement shown in figure 8a allows "towers" of interconnected cross members and support members to be formed and, depending upon the orientation of the support members, can accommodate either compact discs or tape cassettes or a combination of both.

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The arrangement shown in figure 8b allows an interconnected array of racks to be formed in which adjacent support members are joined together at different levels by cross members. Due to the construction of the support members in which the first plurality and second plurality of slots are formed diametrically opposed, in addition to regions chosen for accommodating tape cassettes and compact discs (labelled T and C respectively), additional regions labelled X_c and X_t are formed between the support members which can accommodate, respectively, compact discs and tapes as well. Thus, by constructing an assembly of racks as shown, the entire space of the rack can be effectively used for accommodating different types of recorded media.

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25 Feet 112, 114 are shown in more detail in figure 9 and are formed similar to the cross members except that recesses

182, 184 are such as to allow the feet 112, 114 to point forwardly of the assembled rack.

Although the embodiment of the invention has been described
5 applied to a rack for storing cassette tapes and compact
discs, this is not to be construed as limitative and racks
of the invention may be used for any purpose which requires
storage of a plurality of articles of differing dimensions.

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Claims

1. A rack comprising first and second support members and means for retaining the members in spaced relation in two relative orientations, the support members each having a first and a second plurality of slots arranged to face one another in said relative orientations to allow retention between the members of respective articles of differing dimensions.
2. A rack as claimed in claim 1 wherein the first plurality of slots are of substantially the same width as a cassette tape box.
3. A rack as claimed in claim 1 or claim 2 wherein the second plurality of slots are substantially the same width as a compact disc box.
4. A rack as claimed in claim 1 wherein the first and second slots of each member are separated by a dividing portion, the dividing portion being such that the difference in depth of the first and second slots is equal to half the difference in the dimension of the part of the articles which is received between the members.
5. A rack as claimed in claim 4 wherein the difference in

depth of the first and second slots is approximately 7.5mm.

- 5 6. A rack as claimed in claim 5 wherein the rack is arranged to accommodate cassette tape boxes and compact disc boxes and wherein the first plurality of slots are the width of a music cassette box and the second plurality of slots are the width of a compact disc box.
- 10 7. A rack as claimed in any one of the preceding claims wherein the retaining means comprises at least one cross member connectable between the support members.
- 15 8. A rack as claimed in claim 7 wherein the support member is of a cross sectional shape having one degree of symmetry.
- 20 9. A rack as claimed in claim 7 wherein the cross members have a flat side upon which the rack is restable horizontally.
10. A rack as claimed in claim 7 wherein the cross member includes wall mounting means.
- 25 11. A rack as claimed in any one of claims 7 to 10 wherein the cross member includes at least one socket for

receiving a support member.

12. A rack as claimed in claim 11 wherein the cross member includes four said sockets for receiving respective cross members, the sockets being arranged in two aligned pairs to receive support members engaging the cross member from each side.
13. A rack as claimed in any one of claims 10 to 12 further comprising means for connecting the support members and cross members together.
14. A rack as claimed in claim 13 wherein the support members and cross member include aligned openings for receiving said connecting means.
15. A rack as claimed in any one of the preceding claims further comprising means for supporting the support members in a vertical orientation.
16. A rack as claimed in claim 15 wherein said means comprises at least two feet connectable respectively to the support members.
17. A rack as claimed in any one of claims 7 to 14 wherein the cross member includes at least one slot for receiving a said article.

18. A rack as claimed in claim 17 wherein the slot receives an edge of the article.

19. A rack as claimed in claim 18 wherein the slot receives a corner of said article.

20. A rack as claimed in claim 16 wherein the cross member includes two said slots one for receiving an edge of an article and the other for receiving a corner of the article.

21. A kit of parts for forming a rack for retaining a first and second types of articles having differing dimensions comprising at least two support members each having a first and a second plurality of slots and at least one cross member connectable to the support members for holding the support members in spaced relation in two orientations in which like slots face one another, the first and second pluralities of slots having different depths to accommodate different said articles therebetween.

22. A rack assembly comprising a plurality of support members interconnected by a plurality of cross members to define regions for receiving first and second types of articles, the support members being each provided with first and second pluralities of slots arranged to

face one another in two relative orientations to allow retention between the members of said respective articles, the cross members connecting first and second said support members in a first relative orientation and the second and a third said support member in a second relative orientation whereby said different articles may be accommodated.

23. A rack assembly as claimed in claim 22 wherein said first and second types of articles comprise compact disc boxes and tape cassette boxes.

24. A rack substantially as hereinbefore described with reference to the accompanying drawings.

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Relevant Technical Fields

(i) UK Cl (Ed.M) A4L - LCR - LAV - LBA - LBDA - LBDC;
A4B

(ii) Int Cl (Ed.5) A47B

Databases (see below)

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii)

Search Examiner
J GRAHAM

Date of completion of Search
10 MAY 1994

Documents considered relevant
following a search in respect of
Claims :-
1-24

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